State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
Engineering Division
Honolulu, Hawaii 96813

September 22, 2010

Board of Land and Natural Resources
State of Hawaii
Honolulu, Hawaii

REMOVAL OF DAM STRUCTURE FROM REGULATED STATUS
E-13 RESERVOIR (HI-0027)
ISLAND OF HAWAII

The Engineering Division hereby submits are request for your authorization and approval for the removal of the E-13 RESERVOIR from our state dam inventory, pursuant to Chapter 179D Hawaii Revised Statutes and Chapter 190 Hawaii Administrative Rules.

DAM OWNER:
Kamehameha Schools
567 S. King Street, Suite 200
Honolulu HI, 96813

LANDOWNER:
Same as dam owner

SUMMARY OF REQUEST:
To removal E-13 Reservoir from our dam inventory

LOCATION: Honokaa, Hawaii, Hawaii, TMK: (3) 4-4-0041:001. See Exhibit 1.

BACKGROUND:
The E-13 Reservoir was constructed in 1928 for irrigation purposes. It is an embankment dam lined with concrete rubble masonry on the upstream face. The reservoir was fed by a 3-foot by 3-foot concrete flume that tied in to the Hamakua Ditch. After 1966, with the closing of the sugar cane industry in this area, this flume was disconnected from its water source; therefore, the reservoir is normally dry. The outlet gate has been left open releasing any water from runoff that flows into the reservoir from a small drainage area of approximately 32 acres.

DESCRIPTION:
The E-13 Reservoir Dam is approximately 25.5 ft. high, 650 ft. long. The surface area of the reservoir is approximately 4.1 acres. The reservoir has the potential to impound a maximum of 45 ac-ft (29 MG) of water. The existing outlet is a 16 inch ductile iron pipe. There is a 7-foot high trapezoidal earthen spillway channel, approximately 10 ft. wide at the invert and 30 ft. at the top. See Exhibit 2.

FINDINGS AND REMARKS:
A topographic survey of the E-13 Reservoir was conducted by the owner's consultant in February, 2008. A copy of the survey map is shown on Exhibit 3.

ITEM L-4

In accordance with HRS 179D-3, dam means "any artificial barrier, including appurtenant works that impounds or diverts water and that is twenty-five (25) feet or more in height from the natural bed of the stream or watercourse measured at the downstream toe of the barrier, or from the lowest elevation of the outside limit of the barrier if it is not across a stream channel or watercourse to a maximum water storage elevation, and has an impounding capacity at maximum water storage elevation of fifty (50) acre-feet or more.

The reservoir in its present state normally has no impoundment. There are no buildings or public road downstream of this structure. Therefore, there is no potential hazard to public safety downstream of this dam which is classified as a low hazard dam.

Based on the low hazard classification of this structure, a 100-yr. design storm was chosen for a flood routing analysis. The 100-yr. 24-hour rainfall for this area is 22 inches. The flood routing results show that the pond will have a maximum storage of 34.35 ac-ft. with a maximum height of 18.67 feet. With these results, this structure does not fall within the definition of a dam as defined in HRS 179D-3.

CHAPTER 343 ANALYSIS – ENVIRONMENTAL ASSESSMENT:
There in no construction involved in this request and this structure is located on private land and is not in the conservation district. Therefore, an EA is not required.

RECOMMENDATION:

That the Board:

1. Authorize the approval to remove this dam from the state dam inventory; and
2. Authorize the department to put this structure in the unregulated dam database.

Respectfully submitted,

CARTY CHANG
Acting Chief Engineer

APPROVED FOR SUBMITTAL:

LAURA H. THIELEN
Chairperson

Exhibit(s): 1 Location Map and Picture of location
2 Plan view of project
3 Topographic map of project

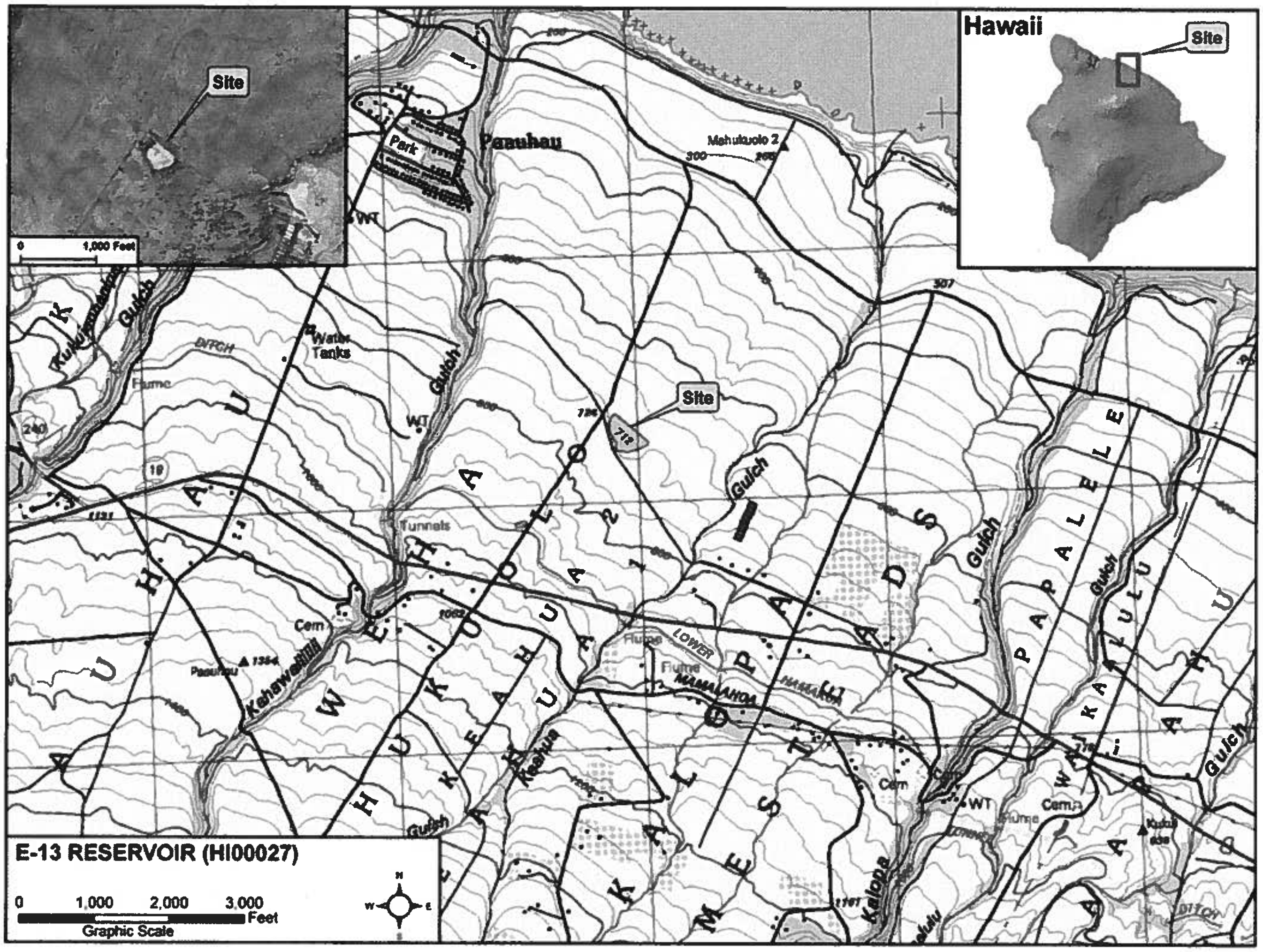
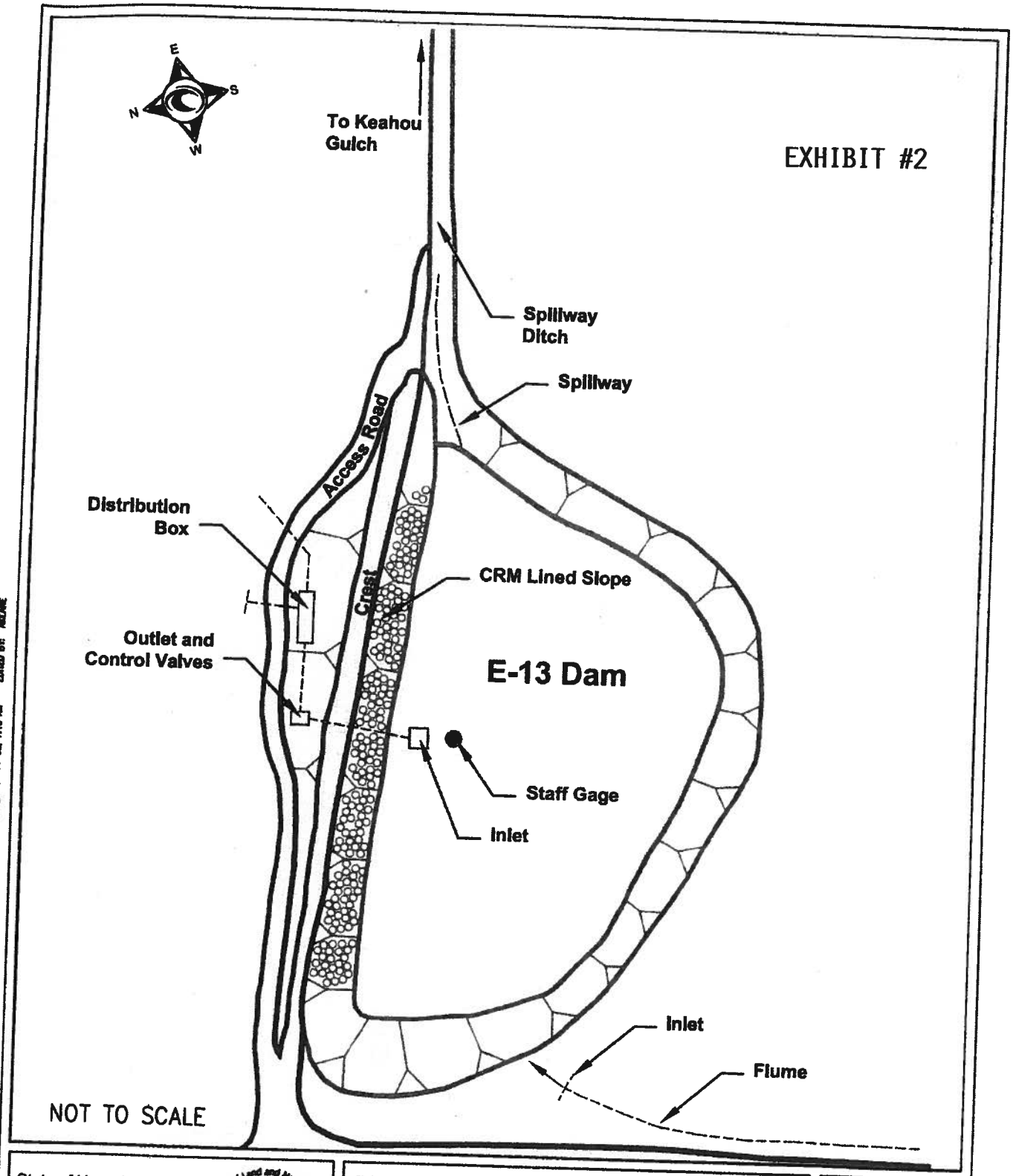

Site
1,000 Feet
Hawaii
Site
Paauhau
Park
Mahukuolo 2
Water Tanks
WT
DITCH
Flume
Gulch
Site
Tunnels
Cem
Paauhau
Kehawalilili
LOWER
HAMAKUA
Flume
Kealua
Cem
WT
Flume
Cem
Kalopa
Gulch
DITCH
E-13 RESERVOIR (HI00027)
0
1,000
2,000
3,000
Feet
Graphic Scale
N
E
W
S

EXHIBIT #1

EXHIBIT #2



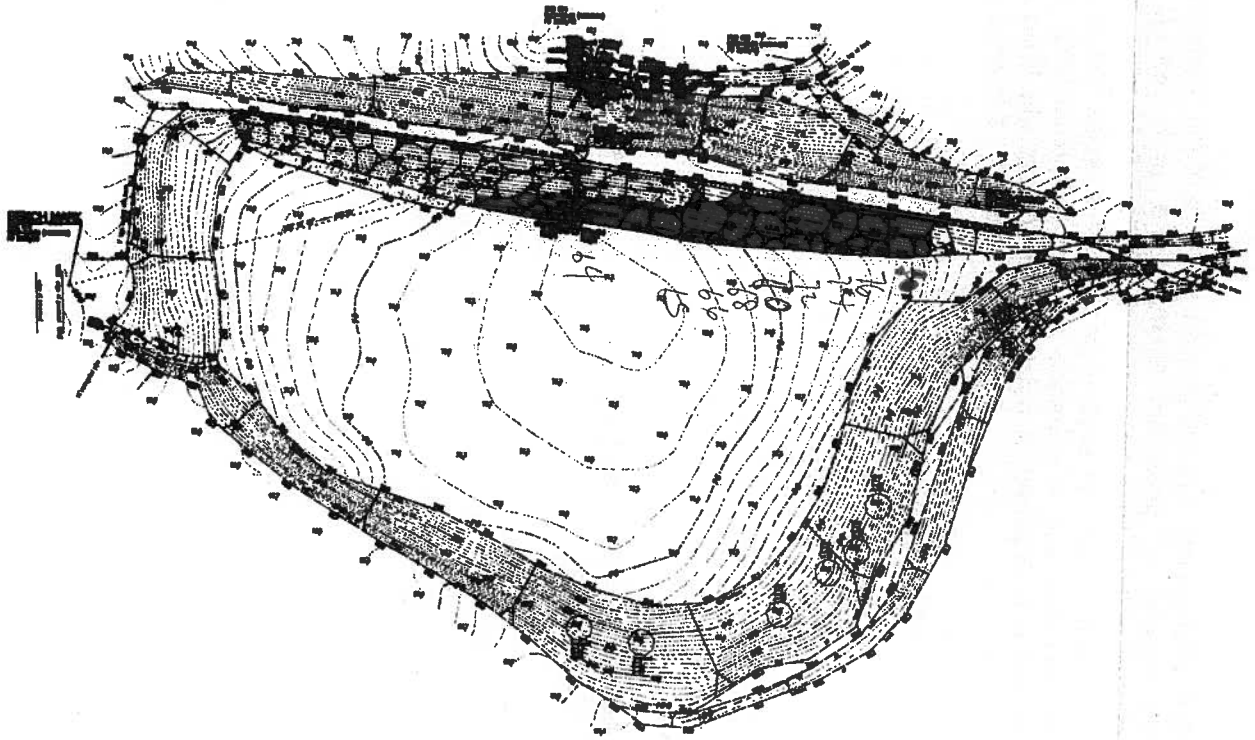
State of Hawaii
Department of Land and Natural Resources
Engineering Branch

Figure 2: Hamakua E-13 Reservoir
Site Plan

Topographic Survey Investigation

April 2008

EXHIBIT #3



NOTE:
1. AZIMUTHS & ELEVATIONS ARE ASSUMED.

TOPOGRAPHIC SURVEY MAP

HAMAKUA E-13 RESERVOIR

AT MAHAKUOLO, HAMAKUA, HAWAII, HAWAII

DATE: FEBRUARY 14, 2008
FIELD BOOK NO. 2289

TAX MAP KEY: Por. 4-4-04:1 3rd Division

Figure 3: Topographic Survey Map